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NEWS RELEASE

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Address
by
James E. Webb, Administrator
National Aeronautics and Space Administration

EUROPEAN BROADCASTING UNION
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It is a privilege to welcome a distinguished group of European broadcasting officials to this headquarters of the United States aeronautics and space research and development activity.

We have, of course, a common interest in the potential of satellite communications -- in projects such as Telstar, which is already knitting new bonds among the nations of the world. But I would not restrict our mutuality of interest to communications alone. We have a much broader common ground.

I welcome you on your visit to the National Aeronautics and Space Administration today as fellow managers of the scientific and technological revolution that characterizes our age in history.

In your own field of television broadcasting you are helping the people of your own nations, of Europe, and of the world, to harvest the fruits of this explosive advance.

Therefore, we as explorers of space, and you, as users of space, speak to a large extent a common language. You know something of the costs and rewards of intensive research and development, and of the potential which modern technology has for good or evil, depending on how it is employed.

Only those whose daily work takes them behind the scenes of today's research and development activity, or who are employing the recent advances in technology as the primary resource of their daily activities, can fully appreciate the potential of this great investment for the future. Only the people who are planning now to make today's marvels the servants of mankind tomorrow can comprehend and appreciate the pace of technological change in the modern world.

We have witnessed, in our time, remarkable -- even astonishing -- advances in the field of communications. We have long spoken of global communications networks, and to a limited extent such networks have been operating, even without the use of space.

But you here today know better than I the many barriers to continuous, immediate, and economical communication by radio and television on a truly worldwide basis.

In so far as these barriers are technical, and not political, it is the job of NASA to help overcome them, and this we hope to do in the next few years with our orbiting of experimental relay stations in the sky. The brilliant success of Telstar, backed by stellar technical performances on the ground on both sides of the Atlantic, has given us a glimpse of what the future holds in store.

The scientists and engineers are hard at work. The physical resources to support them are available. I need not remind you that the technological means to make global communications by satellite a practical reality are close at hand.

I wish you Godspeed in your efforts to use these new facilities effectively for the benefit of mankind.

In my remarks this afternoon I hope to do three things:

First, I would like to reaffirm the intention of the United States to proceed without delay to the establishment of a commercial communications satellite system.

Second, I would like to stress the broad scope and many varied aspects of our national space program, of which the communications satellite activities are but a small -- although very important -- part.

Finally, I would like to state, as clearly as I am able, the objectives of the United States space program, and the progress we are making toward their achievement.

From the very beginning of our space program we have been striving to develop satellites that could be used to establish continuous radio and television links with all parts of the globe.

When Congress established the National Aeronautics and Space Administration in 1958 it set the policy of the United States that activities in space should be devoted to peaceful purposes for the benefit of all mankind.

Improvement of global communications seemed to be an excellent way to begin the implementation of that policy. The success of our early experiments, capped by the current performance of Telstar, has confirmed our hopes.

In August of this year, less than four years after passage of the Space Act, Congress passed the Communications Satellite Act calling for the establishment of a commercial communications satellite system, as part of an improved global communications network. This satellite system, said Congress, is to be established "as expeditiously as possible."

As you know, United States participation in the global system will be through a private corporation, subject to appropriate governmental regulation. The organization of this corporation is already underway.

The law provides that NASA will work very closely with the new corporation. We will assist the corporation in its research

and development program, and furnish launching and associated services for the establishment, operation, and maintenance of the satellite system.

Telstar, as you may know, is the product of an interesting innovation so far as the relations between government and business firms are concerned.

The American Telephone and Telegraph Company was one of the leading competitors for the contract to build the government's experimental communications satellite called Relay.

When the decision was made to place the Relay contract with the Radio Corporation of America, the AT&T Company decided that they had already put such a substantial investment into their version of the project and had such serious responsibilities as a common carrier, that they would like to go ahead to prove it out at their own expense.

As a result, we entered into an arrangement by which AT&T would pay for all the development work of the Telstar satellite, would make available for future communications use the results of their work and technology, and would reimburse NASA for the launching.

Thus we have had in this case an interesting example of a reversal of roles. Normally, industry is in the position of taking pride in the fulfillment of a contract for the government.

Here, a Government agency that had taken a contract from a private industry, had delivered the services called for to exact specification (because the orbit was almost precisely that specified by AT&T), within the time limit specified and at the contract price.

A great deal of research and development work is yet to be done before the new corporation can select and start to build the first operational communications satellites.

To assist in this work, NASA plans to launch additional experimental communications satellites in low and synchronous orbits in the next two years or so.

Mr. Jaffe, the next speaker, will discuss this program in greater detail. My desire is to assure you that we will drive ahead with our experimental work, and assist in every way we can to get the new commercial system in operation as soon as possible. We are very proud of the progress we have made in pioneering this peaceful use of space, and we want to see our efforts made of maximum and lasting value to mankind.

We are spending some $85 million on our communications satellite program in the current fiscal year. This is a large sum, with a great deal of thrust behind it when applied to one specific area of space technology. But it is still less than three percent of the total NASA budget for the year. I say this, of course, not to minimize the importance of the communications satellite program,

but to give some indication of how great our overall civilian space program is.

The communications satellite, and our meteorology satellites, are one of the products of our general advance into space. Certainly we could not have afforded all the expense of rocket and spacecraft development, construction of launch facilities, and other investments, for communications or weather satellites alone.

When we speak of the contribution which space technology is making to broadcasting, we should not forget the other side of the coin. The rocket, developed initially for military purposes, first opened the gates to space. But there would have been no accurate guidance for rockets, and no Space Age, if the art of telecommunications had not already been so advanced. The tiny transistor and the mighty rocket go into space hand in hand.

This is just one example of how space activities are made possible only by rapid progress in many branches of science and industry, and how space, in turn, stimulates science and industry and presents us with ever new challenges and new opportunities.

Communications satellites are feasible only if they can operate under the extreme conditions of the space environment over long periods of time without service or repair. The great effort that is now going into improving the performance and reliability of the electronic components in these satellites should be reflected in better equipment for many purposes here on earth.

In May of last year, four months after taking office, President Kennedy called for an acceleration of the national space program, especially in the areas of large launch vehicles and manned space flight. To give the Nation a clear focal point for its efforts in space, he recommended that a manned exploration of the moon be made a high priority national goal, and that a landing be made in this decade, rather than some time after 1975, as had been the schedule. Congress gave overwhelming support to this accelerated program.

With the additional funds which Congress has made available, we are making very rapid progress in launch vehicle and spacecraft development. I am confident that we can accomplish the lunar landing well before this decade is out, and meet the national goal we have set.

Because of current emphasis on manned space flight activities, some people gain the impression that the main purpose of our national space program is to beat the Russians to the moon. This is a highly oversimplified view, and it distorts the nature and purposes of our program.

Certainly we would like to be first on the moon, and hope to be, but that in itself is not the national objective. The lunar landing is not the ultimate, or even the greatest prize. The true value of this effort lies in learning how to get to the moon,

developing the technology and know-how which is required to get there, and employing this technology and know-how for many purposes in space.

Our national objective is to achieve pre-eminence in space, and we now have a tremendous effort underway to achieve that objective.

As President Kennedy said recently in Houston, where we are building the new manned spacecraft center:

"Our leadership in science and in industry, our hope for peace and security, our obligation to ourselves as well as to others, all require us to make this effort ... and to become the world's leading spacefaring nation."

I hope you gentlemen agree with that. I believe we are acting here in your interests as well as our own.

In the world as we know it today, the United States, if it is to remain a great nation, and the Free World, if it is to remain free, could aim no lower than pre-eminence in the new sea of space.

We are working in four main areas to achieve this aim.

1. We have an extensive program for carrying out scientific investigations in space, mainly through the use of unmanned spacecraft.
2. We are applying space technology to meet the needs of mankind, particularly in the fields of communications and weather.

3. We are rapidly building the facilities and developing our capabilities for advanced manned space flight.

4. In our laboratories we are working for new breakthroughs in space technology on which we will base our space programs five and ten years from now. In our workshops we are building the rockets and spacecraft that will take men to the moon and instruments to the planets. In our advanced research laboratories we are examining ways of doing these things better, and of going on to more advanced objectives.

Our organization includes a program manager for each of the following areas -- Space Sciences, Applications, Manned Space Flight, and Advanced Research and Technology.

To achieve pre-eminence in space will require leadership and advances in each of these areas.

We are clearly ahead of the Russians in space sciences and in peaceful applications of space technology. We have been behind in the development of manned space flight largely because of a lag in producing large launch vehicles, but are making a determined effort to catch up and forge ahead. Because of the secrecy with which space activities are conducted in the Soviet Union, it is difficult to say where we stand in regard to advanced research and technology. We think we are well protected now against any technological surprises in space. But we must, of course, keep constantly searching for new possibilities in all directions, and at the same time be

wise in our judgment of which lines of investigation offer the most promise and deserve the most attention.

It is very difficult to give a full picture of NASA activity in the limited time I have available. I would like to mention some of the significant areas which do account for most of our effort and do give a good idea of what we are doing.

1. In addition to the communications satellites, we are well-advanced in the development of weather satellite systems, which should be operational within the years immediately ahead. We are also studying a system of navigational satellites. We expect to launch a substantial number of experimental communications and weather satellites in the next two or three years.

2. In our big booster program we are building the Saturn C-1, which will orbit a weight equal to more than seven Mercury capsules like that of John Glenn. Also under development is the advanced Saturn C-5 which will place the weight of 85 Mercury capsules in an orbit 300 nautical miles about the earth. We have already flight tested the first stage of the C-1 and hope to fly the complete rocket next year. The Advanced Saturn will put more than 100 tons in earth orbit and send more than 40 tons to the vicinity of the moon.

The first launch is set for some time in 1965. The C-5 is the launch vehicle we will use for the lunar landing.

3. We are building what you might call the shipyards of the space age. We are making a major investment in facilities to fabricate, test, transport and launch these huge rockets. These are the ground facilities essential to space capability. Our timetable for getting to the moon depends on getting these facilities built rapidly. The road to the moon has to be paved with a great deal of steel and concrete poured here on earth, housing giant engineering complexes controlled by advanced electronic means, and linked to vast complexes for the production and storage of both conventional and very advanced fuels and oxidizers.

4. We are building the two-man Gemini spacecraft which will enable our astronauts to spend a week or more in orbit and to perfect rendezvous in space techniques. The first Gemini flights are expected in 1963 and the first rendezvous maneuvers in 1964. We are also building the three-man Apollo spacecraft which will travel to the vicinity of the moon, and we expect soon to let the contract for the

two-man "Bug", or lunar excursion vehicle, which, under present plans, will leave the Apollo spacecraft while in lunar orbit and drop down to the surface of the moon. Needless to say, we have the men who will fly these craft in training and hard at work.

5. Our program includes an array of versatile scientific spacecraft called Orbiting Observatories. Some of these, including one already flying, will specialize in studies of the sun. Others will be geophysical observatories, and others will take telescopes and other instruments aloft for study of the stars. These are what we call second-generation satellites with many refinements and almost incredible abilities to accurately point their instruments on command from the ground and to store up and report back great quantities of precise data. For example, the Orbiting Astronomical Observatory, which will carry a 36-inch telescope out beyond the veil of the earth's atmosphere, will "see" many things which cannot be observed with the most powerful 150-inch telescope on earth.

6. We have a vigorous program underway to explore the moon and the planets with unmanned spacecraft. We got a near-

perfect launch on our moon shot last week, but the power supply of the Ranger spacecraft failed to function. We plan nine more Ranger shots at the moon, including four next year and five the year after. Out of this effort, learning from our failures, perfecting our equipment and techniques, we are going to get the results that Ranger is designed to give. We are also working on a more advanced unmanned lunar landing craft called Surveyor which can deliver operable instruments on the moon and also take pictures and make other observations while in orbit around the moon. Ranger and Surveyor spacecraft will yield much information essential to planning the vehicles which will land our first astronauts on the moon and to picking the best landing spot for them. Also in the years ahead, Mariner and Voyager spacecraft will tell us more about Mars and Venus as they fly by the planets or go into orbit about them. One Mariner spacecraft, already en route, is expected to yield new knowledge of Venus as it passes that planet on December 14. Ingenious devices are being developed which will collect samples on the planets and report whether life as we know it exists there.

7. Development of nuclear power for rocket propulsion is one of our major goals. This more efficient power for upper stages, utilized with the conventionally fueled lower stages we are building, will give a large increment to our booster capability. Many difficult problems have to be overcome, but we are well on the way to solving them, and hope to fly our first nuclear propelled rocket stage well before this decade ends. We are also working on nuclear powered generators to produce electric power in space for long distance communication, to keep our astronauts alive and comfortable, and eventually for electric propulsion. We are working on several forms of electric propulsion for the long voyages to the planets in the not-too-distant future. When we can put the atom to work for us in space, we will be close to full mastery of that hostile environment.

8. In addition to our communications and weather satellites, and possibly the navigation satellites, there is another side to our applications program. We are making a special effort to see that the new techniques, processes, and materials developed in the space program are made known to

industry and put to use wherever profitable in our economy. We are prepared to extend such uses for the benefit of all mankind.

9. To round out this sampling of NASA activities in the national space program, I would also like to mention that we are very much interested in the future supply of highly trained and imaginative engineers and scientists who will help roll back the technological frontiers. We have projects for helping qualified universities build up their research facilities and also for giving scholarships to promising graduate students interested in working in the space and related fields.

I have not dealt here today with the international aspects of our United States space program. The NASA Director of International Programs, Mr. Arnold Frutkin, will do that a little later. I do wish, however, to comment on the fact that the United States effort has been, since it was conceived, an open thoroughly reported program, directed toward peaceful ends, for the benefit of all men of all nations.

In recommending that a civilian agency be established to conduct the United States space program, President Eisenhower said, in

1958, that he had reached this conclusion "because space exploration holds promise of adding importantly to our knowledge of the earth, the solar system, and the universe, and because it is of great importance to have the fullest cooperation of the scientific community at home and abroad in moving ahead in the fields of space science and technology.

"Moreover," President Eisenhower said, "a civilian setting for the administration of space functions will emphasize the concern of our Nation that outer space be devoted to peaceful and scientific purposes."

Recently, in an address in Houston, Texas, President Kennedy restated the peaceful motivation of our space effort, and our desire that the results be employed for the benefit of all men. He said:

"Our leadership in science and in industry, our hope for peace and security, our obligations to ourselves as well as to others, all require us to make this effort, to solve these mysteries, to solve them for the good of all men, and to become the world's leading spacefaring nation.

"We set sail on this new sea because there is new knowledge to be gained, and new rights to be won, and they must be won and

used for the progress of all people. For space science, like nuclear science and all technology, has no conscience of its own.

"Whether it will become a force for good or ill depends on men, and only if the United States occupies a position of pre-eminence can we help decide whether this new ocean will be a sea of peace, or a new terrifying theater of war."

I hope, from this summary of our national space program and its objectives, you will regard the effort as one which is worthy of this great democracy and a characteristic expression of the pioneering tradition of our people.

In saying that, I would like to emphasize that the pioneer spirit of which we in this country are justly proud is both a native product and a part of a European heritage. Year after year throughout our long history of crossing new frontiers we have received a substantial and invigorating infusion of the pioneering spirit of Europe.

Let us hope that the Telstar satellite and its successors will form a new channel through which the pioneer spirit of the Space Age will flow in both directions, and the scientific, technological and intellectual resources of the European and American continents can be joined to enrich the lives of all our peoples.